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Peak phosphorus: an issue to be addressed

by Michel Prud'homme

Over the past two years, several articles in numerous magazines and other media have claimed that world phosphate reserves are shrinking rapidly due to "extravagant" use of phosphate fertilizers and a perceived lack of sustainable resource management by the phosphate industry. Several researchers are promoting the establishment of a non-partisan international body to monitor, manage and provide policy direction concerning phosphate supplies. Research scientists and economists have published articles on the dwindling reserves of phosphate rock, with projections of depletion by 2030. These articles have been sensationalist, alarming the public and policy makers about the consequences for food security of depleting and mismanaging phosphate resources. We believe that the public debate on this issue is based on misleading facts and obsolete information. Researchers have made projections with a poor understanding of phosphate markets and of industry's approach to resources.

All the studies on phosphate reserves have quoted the United States Geological Survey (USGS) as the main public reference on the current state of world phosphate reserves and resources base. The USGS estimates have not been thoroughly updated for years and would therefore appear incomplete. Nevertheless, this remains the principal publicly available reference.

Several articles have stated that phosphate production peaked in the late 1990s, while the facts show a steady increase since 2000 with a temporary slowdown in 2008/09. Comments on shrinking production and exports of



Feeding the phosphoric acid reactor with phosphate rock. Darou, Sénégal.

Photo: A. Kotlarevsky

phosphate rock in the United States are disconnected from market considerations. They do not integrate international competitive factors, or rising output in consuming countries and from emerging suppliers.

However, there is indeed a sustainable approach to managing phosphate rock extraction, reducing production and processing losses, and improving the utilization and application of phosphate-based plant nutrients.

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Will the World Food Summit provide new hope for food security?

by Natalia Federighi

The general perception of the outcome of the World Food Summit in Rome, held on 16-18 November, is that it was less impressive than the one organized in June 2008. The main positive outcome was an agreed Declaration which, as some critics have pointed out, is not specific enough about the urgency of eradicating hunger (the target of the First Millennium Development Goal to halve, between 1990 and 2015, the number of people who suffer from hunger, will not be met), while official development assistance targets for agriculture remain somewhat vague.

This Summit represented FAO Director-General Jacques Diouf's commitment to deliver on the momentum built up by



Photo: IPCRI/ M. Hermann

the high-level meeting in 2008 and the G8 process during the first half of 2009. Global food security is still very high on the agenda of developing countries, although the emphasis now - for developed and developing countries alike - is more on the climate change dimension and on fallout from the economic and financial crisis. For example, what will be the impact on food prices post-recovery?

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focus on

The Fertilizer Society of South Africa

by Gert van der Linde

The FSSA was founded in 1959 and functions as a non-profit organization. The Society currently represents around 90 per cent of the players in the South African fertilizer industry. It is



fully funded by members, and membership is open to any fertilizer manufacturer/blender/distributor in Southern Africa. In 1995, the lime producers and distributors in South Africa joined forces with the FSSA. There are currently four cor-

porate, 13 ordinary and two affiliate members, including one member and one affiliate member from Zimbabwe. The Society's mission is to maintain and expand itself as an independent and authoritative body on fertilizers and fertilizer-related matters in Southern Africa. To fulfil its mission, the FSSA focuses its activities on the following key objectives:

- Facilitate effective liaison and negotiations with government, organized agriculture, and other interest groups which will enhance the interests of its constituent industries;
- Assimilate, add value to, and disseminate fertilizer-related information;
- Promote fertilizer and agricultural lime (aglime) practices which are agro-economically and environmentally accountable;
- Promote a code of conduct in the industry.

All production, sales and distribution of fertilizers in South Africa are governed by the regulations of Act 36 of 1947. These regulations need continuous monitoring and updating. To this end, the Society has regular meetings with the Registrar, Act 36, to negotiate and advise on these matters. This service is provided to the whole fertilizer industry.

The Society assists IFA and the International Fertilizer Development Center

(IFDC) with arrangements for congresses, symposia and workshops when these are held in South Africa.

Early years before 1982

Seven people were initially employed by the Society, and there were 40 employees between 1970 and the early 1980s. Almost 80 per cent were engaged in research projects funded by the members. Most research went into the fertilizer requirements and yield optimization of maize, wheat, sunflowers, dry beans and pastures. During this period, several scientists from the Dead Sea Works were seconded to the FSSA for three years each to conduct research on cotton fer-

tilization and yield optimization. The Fertilizer Society also initiated the establishment of an inter-laboratory analysis scheme, with a view to standardizing soil sampling and fertilizer analysis methods in South Africa.

The data from all this research formed the basis for the Fertilizer Handbook, which was first published in 1974. It is currently in its sixth revised edition.

Using the skills and knowledge of the scientists employed by the Society, as well as data from the Fertilizer Handbook, the FSSA played a leading role in the training of emerging farmers during this time.



The FACTS scheme

The FSSA and the BASOS CC corporation administer the FACTS scheme, whose main objective is to provide people with a basic understanding of fertilizers and aglime and enable them to advise growers and farmers in an economically and environmentally sound manner.

It is also of great benefit to farmers to attend the course, as they can then relate to and interact so much better with their advisors.

As time passed, it became clear that FACTS could be utilized to provide extension officers with additional tools to help them in their work.

Since its inception in 1998, more than 600 candidates have enrolled in the course and passed the written examinations. It consists of eight modules:

- The basic principles of plant nutrition;
- Factors that determine the growth of plants;
- The origin, production and properties of fertilizers and aglimes;
- Advice and recommendations regarding fertilizers and aglimes;
- Application methods for fertilizers and aglimes;
- Transport, handling and storage of fertilizers;

- Mineral fertilizer use and the environment;
- Structure of the South African fertilizer and aglime industries.

Once enrolled, candidates are supplied with the Fertilizer Handbook, as well as copies of additional notes on the eight modules. The candidates can either study at home or enrol for the week-long course at BASOS CC. Then they take examinations at various centres throughout the nine provinces of South Africa.

Each candidate who successfully passes the exam is provided with a credit card-sized certificate by the FSSA, identifying him/her as an accredited fertilizer advisor.

The training scheme has gained in popularity. In 2006, the FSSA ventured outside South Africa and presented the course in Zambia. The turnout of farmers was beyond expectation, and the course was presented again in 2007 at the University of Lusaka. A new module on irrigation and fertigation, specifically designed for Zambia, replaced the eighth module.

The FSSA sees this training scheme as an invaluable tool for extension officers, in order to promote the use of fertilizers and good farming practices in rural areas of Africa and help the people of Africa to feed themselves.

Between 1981 and 1982 South Africa endured a crippling drought, while globally there was a sudden financial downturn. During the same period, the whole fertilizer industry was deregulated and all price controls stopped. This meant, in essence, that the South African fertilizer industry was now fully exposed to world market forces in a totally deregulated environment, with no import tariffs or government-sponsored measures, including no subsidies for agriculture.

After 1982

To survive in this deregulated environment, the FSSA had to be reorganized, resulting in the closure of all research activities by the Society and the cutting down of total staff to four. Most research scientists were seconded to individual member companies. The key objectives of the Society remained the same. However, the focus shifted from hands-on research to the promotion of fertilizer and aglime practices through a variety of measures, such as:

- Arranging and facilitating proper forums where these concepts can be discussed and promoted through technical symposia, conferences and workshops. To this end, the Society targets suitably qualified speakers locally and from abroad to convey a balanced view of fertilizer and aglime use and application;
- The updating, maintenance and promotion of FSSA publications such as the Fertilizer Handbook, CDs of sym-

posia, the FSSA Journal, and a variety of handbooks designed for the emergent farmer;

- Positive contributions to a better trained advisory and sales staff to serve members, as well as training of farmers and students through the FACTS (Fertilizer Advisors Certification and Training Scheme) course.

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IFA Technical Symposium in South Africa

The IFA Technical Symposium will be held from 20-22 April, 2010 in Sun City, South Africa. This event has become a not-to-be-missed opportunity to discuss the latest technical developments with the world's leading experts — while also promoting the global adoption of best practices in safety, health and environment in production. This year's edition will include the participation of the World Bank Group's International Finance Corporation (IFC). IFC specialists bring a wide range of expertise in assisting industrial clients to identify value-added opportunities in their business operations. IFC representatives will be available during the Symposium for one-on-one consultations to discuss project financing and advisory opportunities for assisting IFA member companies to implement sustainability measures at their fertilizer production sites. For more information: www.fertilizer.org, www.ifc.org

sustainability

GPIC "Seals the Deal" with UNEP

by *Fadhel Al-Ansari*

In the months leading up to the Climate Change Conference in Copenhagen, the Bahrain-based Gulf Petrochemical Industries Company (GPIC) actively participated in the United Nations' "Seal the Deal" campaign. The purpose of this campaign was to galvanize political will and public support for a comprehensive global climate agreement.

Beginning on 7 December, governments met in Copenhagen to respond to one of the greatest challenges faced by humanity: how to protect the planet and create a green economy, leading to long-term prosperity. The Seal the Deal campaign encouraged people worldwide to sign an online petition that was presented to governments in Copenhagen.

Abdulrahman Jawahery, GPIC's General Manager, emphasizes that the petition was a solidarity message and a global call, intended to generate awareness and action at the highest level. Representing GPIC, Mr Jawahery "sealed the deal" with the UN Environment Programme (UNEP), followed by a joint



Photo: GPIC

campaign in Beirut during the Sixth Francophone Games in late September and early October, which was attended by delegations of athletes and artists from all over the French-speaking world. Thousands of signatures were collected during the Games.

GPIC is committed to working constructively to control climate change. Among other initiatives, GPIC has commissioned a CO₂ recovery plant from the flue gas duct in December 2009 and used it to increase urea and methanol production,

thus not only reducing CO₂ emissions but also increasing plant output and improving energy efficiency. The company is also urging other organizations to meet their responsibilities to future generations.

Environmentally related projects at GPIC's industrial complex include green landscaping, a fish farm, a bird sanctuary, an aromatic plants garden, and several environmental awareness programmes. GPIC sponsors environmental awards, such as the Delmon International Environment Award organized by the UK-based Royal Society for the Prevention of Accidents, RoSPA.

GPIC has been recognized for its achievements in the field of environment. Among others, it has received the prestigious Sir George Earle Trophy from RoSPA and the international Robert W. Campbell Award from the US National Safety Council.

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Will the World Food Summit provide new hope for food security?

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Could this recovery occur in late 2010-11? And will there be another food crisis?

Food price increases in 2007-08 clearly impacted the developed and developing worlds quite differently. Many small farmers in developing countries have not been able to respond quickly to high prices due to structural constraints. Nevertheless, in its post-Summit assessment, FAO concluded that the Food Summit had managed to obtain:

- a firm pledge to renew efforts to achieve the First Millennium Development Goal with respect to hunger, and to eradicate hunger from the world at the earliest date possible;
- another pledge to improve international coordination and the governance of food security through a profound reform of FAO's Committee on World Food Security (CFS), which would become a central component

“What will be the impact of food prices post-recovery. Will there be another food crisis?”

of the Global Partnership for Agriculture, Food Security and Nutrition. Broadened to include stakeholders from both the public and private sectors and non-governmental organizations

(and elevated to ministerial level), the CFS would coordinate international efforts to combat hunger as well as take rapid and informed decisions on global food issues. It will be assisted in that task by an international high-level panel of

experts;

- a promise to reverse the downward trend in domestic and international funding for agriculture, food security and rural development in developing countries, and to significantly increase their share in public development aid. This promise is largely based on the L'Aquila G8 commitments. There was considerable debate concerning whether this would constitute new or recycled funding, what the target countries should be (espe-



Photo: IPCRI/ S. Mann

cially in Africa and within the CAADP – Comprehensive Africa Agriculture Development Programme - process), timeframes for disbursements, whether humanitarian assistance should be excluded, and other issues. This debate is set to continue;

- a decision to promote new investments in agricultural production and productivity in developing countries, in order to reduce poverty and achieve food security for all.

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FAO World Food Summit:
www.fao.org/wsfs/world-summit/en/

Excerpts from IFA's call on World Food Day

Improved agricultural technologies and management approaches have doubled the production of world food calories over the past half-century. The shadow of famine and food shortages has been lifted from developed countries but not from developing countries, where most smallholder farmers struggle to achieve even the most basic level of subsistence. They lack access to the existing technology, tools, inputs and knowledge required to manage their land and grow sufficient crops.

The FAO's Director General Jacques Diouf opened the High-Level Expert Forum on 12 October by stating that "there should be a special focus on smallholder farmers [and] their access to land, water, quality seeds and fertilizers." He added that "organic agriculture cannot feed 6.8 billion today and 9 billion in 2050."

(...) Integrated agriculture based on the judicious use of technology and inputs (such as seeds, manures, fertilizers and crop protection products) and good agricultural practices can increase farm production in a sustainable way. By increasing agricultural productivity and decreasing waste and losses, inputs - such as plant nutrients (from organic and inorganic sources) and crop protection products - can significantly mitigate the effects of climate change, prevent deforestation, and protect biodiversity.

Food security and environmental protection are not mutually exclusive goals. Good agricultural practices - such as integrated crop, pest, plant nutrition and soil fertility management and fertilizer best management practices - promote the responsible use of agricultural inputs for greater use-efficiency and cost-efficiency for the farmers and fewer losses to the environment. The knowledge and benefits must be made available to all farmers, recognizing their role as guardians of our shared environment, biodiversity and ecosystems. Women farmers should become specially targeted recipients because of their vital roles in the agricultural workforce, household food procurement and preparation, and family unit support.

There is a need for a radical shift in thinking which places the farmer (including women, youth and agricultural workers) at the centre of sound and sustainable agricultural practices. Farmers deserve a choice between farming systems and all stakeholders need to do more to offer them the best technologies to choose from. In particular, they must be involved in implementing climate change mitigation strategies. To support them, we must create sound and reliable incentives; we must share knowledge and make adequate tools and technologies accessible so that farmers deliver both food and energy security.

The Fertilizer Industry Round Table

Providing insight on technologies and issues impacting plant nutrition for tomorrow's agriculture

by Don Messick

As I travel to various nations worldwide, I get to see a lot of fertilizer operations. I am sitting in Delhi's airport working

my way home from the Fertiliser Association of India's Annual Seminar. Paging through my notes, I am reminded how fertilizer technology has changed during my career. The Fertilizer Industry Round Table (FIRT) has provided a forum for industry profes-

sionals to share ideas on what technologies stand to serve agriculture of the future. Parts of the world may still rely on hand application of fertilizers, but today better quality products, helping to minimize losses and improving crop production and quality, are all the more common.

The Fertilizer Industry Round Table was formed more than 50 years ago. Prior to its creation, the industry relied on an annual meeting of the American Chemical Conference to consider future direction. Recognizing the importance of reaching out to a broader representation of the industry, a core group formed FIRT. In 1955, the first official meeting was held in Washington, D.C. with 11 papers presented. Membership of that core group became the Executive Committee, which welcomed even more names well-known to the industry: Frank "Slugger" Nielson (inventor of the Tennessee Valley Authority's granulator), Al Spillman, Joe Reynolds, Vince Sauchelli, Frank Achorn, Houston Marshall and Walt Sackett, who has been a fixture within the organization and remains active today.

In 1963, interest in FIRT drew more than 600 professionals to its annual meeting. The group further expanded its horizons with global participation. But with tremendous changes in the fertilizer industry, the number of those involved in fertilizer technology for today's companies has shrunk dramatically. Despite this,

FIRT remains a vibrant group serving as the "go-to" organization for talent in this aspect of the industry.

Today's members frequently receive reports on activities in countries throughout Asia, the former Soviet Union, Latin America and a host of others. Technology not only refers to production mechanisms; it has expanded to addressing global fertilizer security, dramatic changes in intellectual technology, and enhancing productivity while considering climate change.

For the past few years, FIRT has joined forces with The Fertilizer Institute (TFI) to deliver the **Fertilizer Outlook and Technology Conference**. This conference is held in October or November in various US cities with relevance to fertilizer. In October 2009, more than 200 delegates gathered in Tampa, Florida, to evaluate developments and challenges facing the industry. Who would have thought in 1955, when the group was founded, that such a broad range of subject matter would be a part of the programme? In recent years, there has been a dramatic look for ways to improve efficiency and still increase production, with a significant portion of the world still undernourished. For years the industry focused on delivering N-P-K, but today's considerations include sulphur, zinc, boron and other nutrients, controlled-release technologies, and agriculture's role as an energy source with renewable fuels, just to name a few.

The Fertilizer Industry Round Table offers its conference each year, collectively providing supply and demand outlooks for nutrients and raw materials with TFI, while focusing on technological strategies for tomorrow's agriculture. Visit www.firt.org for papers and presentations from past meetings dating back to its creation, plus information about upcoming events. The Fertilizer Industry Round Table is a non-profit organization governed by a board of directors, all contributing on a volunteer basis.



Fertilizer Industry Round Table

More information

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IFA news



IFA GREEN LEAF AWARD

for Excellence in Safety, Health and the Environment in Fertilizer Production (SHE)

The Award is open to IFA members only and is given to an individual production site for its efforts, contributions and/or innovations to enhance safety, health and environmental performance in fertilizer production.

Preference is given to companies which have demonstrated significant innovation and/or improvement in SHE by minimizing harm, enhancing production efficiency, improving/enhancing environmental sustainability and occupational health – and which have a proven record in SHE performance.

The application should be submitted on a company letterhead and should also be made available electronically to the IFA Secretariat no later than **30 May 2010**.

The 2nd edition of the IFA Green Leaf Award will be announced during the 2011 IFA Safety Summit. The Award Laureate will be requested to provide a presentation on its SHE activities during this event.

Should you need assistance with the application process, contact: Sophie Palmié, spalmie@fertilizer.org, Fax: +33 1 53 93 05 47 www.fertilizer.org/ifa/HomePage-Member/TECHNICAL-COMMITTEE/IFA-SHE-Award

Understanding the Nitrous Oxide Emissions Reduction Protocol

The Nitrous Oxide Emissions Reduction Protocol (NERP) is intended to reduce on-farm emissions of nitrous oxide (N₂O) in a quantifiable, credible and verifiable way that allows farmers to earn carbon credits. It is currently being readied for introduction in Alberta, the first jurisdiction in North America to actively regulate greenhouse gas (GHG) emissions and establish a regulatory carbon trading market.

NERP is a good example of the public and private sectors working together to assist farmers to implement Best Management Practices (BMPs) on-farm, as well as to reduce overall GHG emissions. Initiated by the Canadian Fertilizer Institute (CFI), NERP is the result of collaborative action that includes the Alberta government, Climate Change Central, ClimateCHECK Corporation and the International Plant Nutrition Institute (IPNI).

NERP is based on applying fertilizer using BMPs that are part of the 4R nutrient stewardship system. This system encourages farmers to apply fertilizer products using the Right Source @ Right Rate, Right Time, Right Place® framework. Farmers can participate in NERP by implementing a suitable management level from basic through intermediate, or even advanced. NERP supports the three pillars of sustainable development, namely environmental, social and economic sustainability.

If farmers meet the criteria outlined in NERP, they may qualify for an offset credit equal to Can \$5-\$10 per acre. They would also be improving the economics of their farm, while doing the right thing in reducing greenhouse gas emissions.

Alberta may be the first political entity to approve the use of NERP in its provincial carbon marketplace, but the potential does not end there. While NERP was developed in Canada, it was designed to be flexible enough for application anywhere in the world where nitrogen-containing fertilizers or recycled bio-solids are applied to farmland. It will help reduce emissions and provide an opportunity for the agricultural community to become involved by earning offset credits.

For more information:

www.cfi.ca

www.climatechangecentral.com

The 4R framework: improving sustainability globally

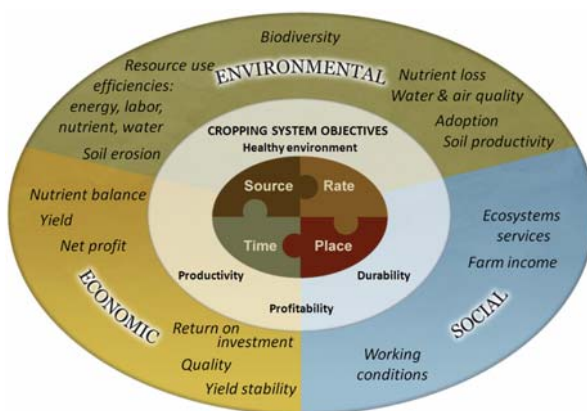
by Doug Beever

Nutrients play a critical role in the economic, social and environmental sustainability of societies around the world. They support the production of affordable and nutritious food, they replenish our soils, and they provide valuable income for growers by improving crop yields and quality. This benefits everyone from growers to the communities that depend on them. However, improper nutrient use can have negative impacts on sustainability. These impacts need to be minimized.

The 4R Global Nutrient Stewardship Framework (4R framework) allows growers to meet their sustainability goals through the adoption of best management practices in four key areas: nutrient source, rate, time and place. The framework recognizes that what is right for one area may not work in another. Best management practices must be customized to address ecological and social differences; it is also clear that practices must be implemented in all four areas to be effective. While that adds some complexity, it is a scientific reality. By recognizing this within the framework, we can achieve more consistent and real improvements in performance.

The communication challenge

Perhaps the greatest challenge faced by the nutrients industry is communication. Nutrient use and best management practices can be complex and difficult to communicate. The impacts on sustainability goals are often unclear or misaligned. The 4R framework simplifies communication and more clearly demonstrates how our sector is working to address stakeholder concerns. It offers a sustainable solution through “a practical, science-based approach to nutrient use”. This unified approach allows all concerned stakeholders to speak with one voice, and to focus limited resources to achieve real improvements in performance.



Supporting policy and science development

The 4R framework provides policy makers and researchers with a foundation they can use to improve performance sustainably through the development and implementation of best management practices. While new practices will play an important role, significant progress can be made by applying existing practices in combination. The information needed to do this effectively is lacking in some areas, and researchers will need support from growers, government and industry to fill the gaps. However, the 4R framework provides a structure that can help focus this effort in a manner that is both efficient and balanced.

From a stakeholder engagement perspective, the framework provides a science-based approach that allows all stakeholders to participate. It also provides the foundation for environmental goods and services. This allows farmers to receive payments for the implementation of best management practices that deliver real environmental benefits, such as reduced greenhouse gas emissions—supporting the growers’ goals of economic sustainability and reduced environmental impact.

The 4R framework provides a solid foundation for stakeholders to work together and improve performance. While there is much work to be done, this is a meaningful step towards sustainability.

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Peak phosphorus: an issue to be addressed

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This issue merits further understanding and could be segmented into three parts, each of which ought to receive specific attention:

- The knowledge of phosphate reserves and resources base;
- The current use, production and product flow of phosphate;
- The long-term projection of plant nutrient phosphorus consumption.

IFA needs to be involved in the debate, through providing sound factual information on the state of the phosphate market and partnering with other stakeholders to update the publicly available information.

Over the past year, several actions and initiatives have been undertaken to enrich the debate:

- The Secretariat has been contacted by media representatives and scientists seeking an industry position on this issue. IFA has responded by providing factual information and questioning some of the protocols followed by a few researchers. The most recent feature article on peak phosphate was published in the journal *Nature* in early October (*Nature* 461, 7 October, 716-718). IFA is quoted as expressing the need to base further research on facts, not obsolete data. IFA has also actively participated in the prepara-

tion of a series of scientific papers by providing information on historical and current production and explaining product flows and future production trends.

- IFA will participate in a new initiative launched by the International Center for Soil Fertility and Agricultural Development (IFDC) to update knowledge of phosphate reserves. In December 2009, IFDC announced the implementation of a multi-year "Phosphate Resources and Research Initiative" with the objective of reassessing world phosphate reserves. IFDC has approached IFA to participate in this initiative and provide guidance on its implementation. The initiative is led by Steven J. Van Kauwenbergh, Principal Scientist and Leader of the IFDC Phosphate Resources and Research Initiative. Steven van Kauwenbergh works in the Research and Development Division of IFDC in Muscle Shoals, Alabama, USA. The first phase of the initiative comprises a review of existing, publicly



Photo: IFA

Phosphate rock loading. Khouribga, Morocco.

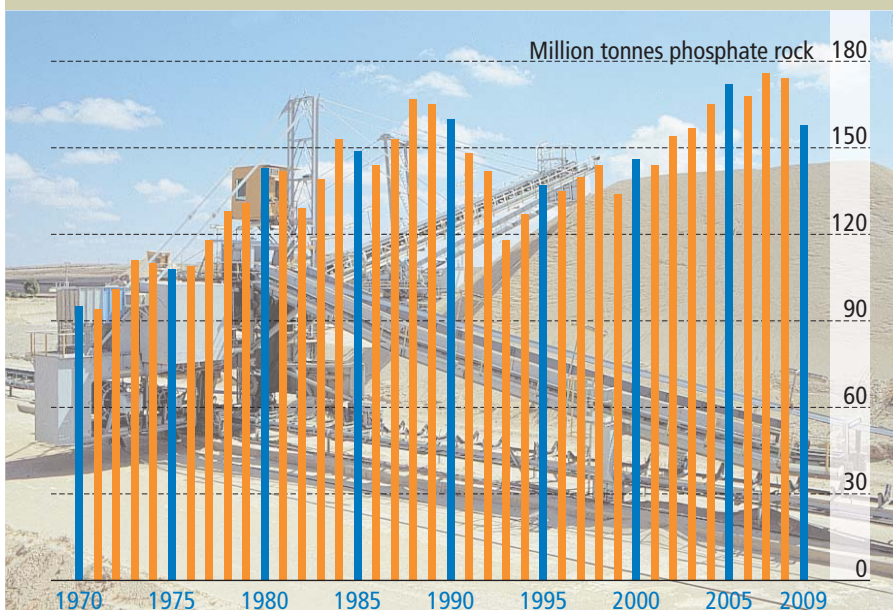
available information on reserves and an assessment of the existing methodologies for estimating phosphate rock resources. This phase will be conducted internally by IFDC. It would lead to the preparation of a paper by mid-2010. Such a document would dispel the myth of the known status of world phosphate reserves, and would facilitate future compilation work on geological data. The next phase would assess the technical and economic aspects of phosphate supply.

- IFA and the World Phosphate Institute (IMPHOS) have initiated the preparation of a joint paper on current use and product flows of phosphate, from the minesite to major end-uses. This paper would provide key facts about phosphate supply and demand and confirm the need for a reassessment of world phosphate resources. IFA has completed a study of global product flows based on major end-uses and has just launched a global survey on phosphate production losses and recovery factors. This information will contribute to the debate by providing missing data to the general public and researchers, on the basis of which further research could be undertaken.

The third aspect would be the preparation of a very long-term projection of phosphate fertilizer consumption. All the current research has projected a simple linear growth of phosphate demand, without considering future plant nutrient efficiency and stabilizing consumption in maturing markets.

By mid-2010, our efforts, with partners such as IFDC, IMPHOS, and others like the International Plant Nutrition Institute (IPNI), will contribute positively and pro-actively to this debate.

World phosphate rock production: 1970-2009



Source: Phosphate Rock Statistics - IFA PIT Committee - December 2009

Agricultural community addresses recommendations to negotiating governments at COP15

Three hundred and fifty agricultural specialists attended the Agriculture and Rural Development Day at the University of Copenhagen on 12 December 2009, organized jointly by the Consultative Group on International Agricultural Research (CGIAR) and the Global Donor Platform. This side-event to the Conference of the Parties (COP15) was timely, given the introduction of agriculture in the negotiated text during the months leading to the Conference. The highlight of the day was the official address by US Secretary of Agriculture Tom Vilsack.

Secretary Vilsack presented an eloquent case for the challenge to agriculture of both doubling food production by 2050 and reducing its emissions drastically. He emphasized the role of what he referred to as "21st century agricultural technologies", which have made possible the breakthroughs needed to feed a multiplying population. He also spoke highly of Dr. Norman Borlaug, citing the dramatic changes in agricultural productivity ushered in through his work.

Secretary Vilsack emphasized the importance of technologies such as precision nutrient management, stress-resistant crops, no-till and irrigation. He also mentioned the private sector's important role in developing and delivering these technologies. The Secretary presented the work of the United States Department of Agriculture (USDA) in relation to climate change adaptation and mitigation strategies for the agricultural sector. He concluded by stressing the importance of understanding linkages between land deforestation and agricultural productivity, noting that in 2010 USDA will release an update of its report on *The Effects of Climate Change on Agriculture,*

“Agriculture is 7 per cent of the GHG problem, but represents 20 per cent of the solution.”



Business day

Land Resources, Water Resources, and Biodiversity in the United States.

The Agriculture and Rural Development Day concluded with the premiere of a documentary film, "Hope in a Changing Climate" by John D. Liu. This film demonstrates that it is possible to rehabilitate large-scale damaged ecosystems, restore ecosystem functions in areas where they have been lost, fundamentally improve the lives of people trapped in poverty for generations, and sequester carbon naturally. Examples from China (Loess Plateau), Ethiopia and Rwanda demonstrate the possibility of radically changing entire landscapes through good agricultural practices (particularly terracing), focusing on the restoration of soils and their fertility. The 30-minute documentary was produced for the British Broadcasting Corporation (BBC) by the Environmental Education Media Project.

Following the Agriculture and Rural Development and Forest Days, a joint statement was issued by the agriculture and forest communities, "Beyond Copenhagen: Agriculture and Forestry Are Part of the Solution":

- Forestry and agriculture are where poverty reduction, food security and climate change come together and must be addressed in an integrated fashion. [This was] the key message today to negotiators from the agriculture and forestry communities at COP15, today.



IFA exhibition stand with Morgane Danielou (left)

- Reducing greenhouse gas emissions and sequestering carbon from agriculture and forests must be an essential component of any strategy to keep global warming below the 2° Celsius threshold. Climate adaptation and mitigation measures must have multiple sustainable development benefits, including conservation of biodiversity and ecosystem services.
- The communities:
 - ✓ Agree it is critical that food security be integrated in the shared vision of the Long Term Cooperative Action text, in order to open the door to adaptation and mitigation support;
 - ✓ Urge climate negotiators to agree on the early establishment of an agricultural work programme under the SBSTA (Subsidiary Body for Scientific and Technological Advice);
 - ✓ Look for agreement that REDD (the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries) includes agriculture, forestry and other land uses;
 - ✓ Believe that the LULUCF (Land Use, Land-Use Change and Forestry) accounting system needs to be favourable to agriculture.

More information

■ For the full statement and reports from the Agriculture and Rural Development Day:

www.agricultureday.org

■ "Hope in a Changing Climate" can be viewed on:

<http://hopeinachangingclimate.org/>

Strengthening our relationship with farming communities

Ajay Vashee, President of the International Federation of Agricultural Producers (IFAP), was the keynote speaker at IFA's 35th Enlarged Council Meeting in Amman, Jordan, on 15-19 November. His presence marked the renewal of an important partnership between the fertilizer industry and farmers worldwide. Around the world, farmers need access to quality inputs and the knowledge to use these products appropriately. The fertilizer industry has a role to play in producing quality products, and in working closely with farmers' organizations to make sure that good agricultural practices are applied in the field, particularly balanced fertilization for optimum nutrient use efficiency and agricultural productivity.

Addressing 90 delegates from 53 companies and 31 countries, Ajay Vashee, a dairy farmer in Zambia, welcomed the greater sense of collaboration and noted the important contribution being made by the Farming First coalition. Such joint initiatives are timely: food security is still at the top of the international policy agenda, as shown by the series of Food and Agriculture Organization meetings that took place in October and November (see article on page 8). In Jordan, IFA's Secretariat also presented its Short-Term Fertilizer Outlook 2009-2010. The data collected by the Agriculture and Production and International Trade Services highlight the dramatic impact high commodity and input prices have had on fertilizer applications. The Association is concerned about the current predominance of nitrogen in fertilization practices, and the



potential yield impact of currently low application rates for phosphorus and potassium. Balanced fertilization needs to be promoted to farmers around the world, with particular emphasis also on the importance of micronutrients.

The demand forecasts are tentatively predicting a rebound of 4.9 per cent, to 166 Mt of nutrients in 2010, in anticipation of a progressive recovery. Global fertilizer supply in 2009 was still affected by the volatile conditions that prevailed in 2008. In 2009, global nutrient production and sales dropped to very low levels due to the important inventory carryovers in distribution systems worldwide. For the second consecutive year, total world nutrient production in 2009 appeared to exceed sales and consumption, translating into a significant build-up of inventories at producers' end. This weakness in demand impacted global nutrient production and industry's operating rates, but with different intensities according to the nutrient concerned. IFA's forecasts, however, predict that the situation in 2010 would see a major reversal, with a significant growth in global demand and a strong 7 per cent rebound of total sales of the mainstream products.

More information

- Proceedings of IFA's 35th Enlarged Council Meeting: www.fertilizer.org/ifa/Home-Page/LIBRARY/Conference-proceedings/Enlarged-Council-Meetings/2009-IFA-Council
- IFA's Fertilizer Outlook reports: www.fertilizer.org/ifa/Home-Page/FERTILIZERS-THE-INDUSTRY/Market-outlooks.html

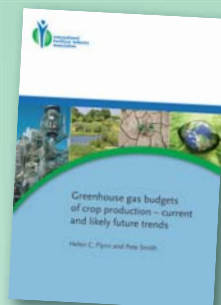
IFA news

IFA releases scientific review report on greenhouse gas budgets of crop production

In January, IFA released *Greenhouse Gas Budgets of Crop Production – Current and Likely Future Trends*. Written by Helen Flynn and Pete Smith of the University of Aberdeen, UK, this scientific review was prepared at the request of IFA as a contribution to the international negotiations on climate change. It provides an up-to-date state of scientific knowledge on greenhouse gas balances in relation to crop production and fertilizer use. The report was written for policy makers, scientists and the fertilizer industry.

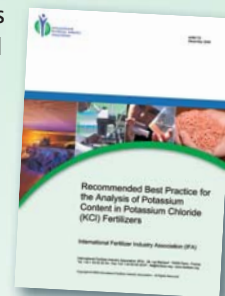
A brief entitled *The Role of Fertilizers in Agricultural Mitigation Strategies – How to Improve Greenhouse Gas Budgets Through Good Agricultural Practices* (based on the review report's Executive Summary) was published in December for the climate change conference in Copenhagen.

Both publications are available from the Climate Change module of the IFA web site: www.fertilizer.org/ifa/Home-Page/SUSTAINABILITY/Climate-change



Recommended best practice for the analysis of potassium content in potassium chloride (KCl) fertilizers

The IFA Expert Working Group on the Harmonization of Fertilizer Sampling and Quality Analysis Methods evaluated analytical methods used globally for the quality testing of potassium content in potassium chloride (KCl) fertilizers. The global peer review process indicates that the tetraphenylboron method, in its two variations (gravimetric and titrimetric), is the preferred analysis methodology for international potash shipments. The publication is available at: www.fertilizer.org/ifa/Home-Page/FERTILIZERS-THE-INDUSTRY/Fertilizer-Sampling-and-Analysis



IFA events

Asia-Pacific industry meets in Borneo

The 2009 IFA Crossroads Asia-Pacific Conference took place from 8 to 10 December in Kota Kinabalu, Sabah, on the Malaysian side of Borneo.

The prospects for market recovery in 2010 stimulated good participation. There were 259 participants from 32 countries, representing 135 companies and five international organizations.

The keynote address was delivered by Sumiter Broca of the FAO Regional Office in Bangkok. His message focused on the impact of the global economic crisis on agriculture and food security in Asia. Other topics addressed during the conference included prospects for the fertilizer market in Malaysia, China and India; the outlook for the potash market; and options for improving wa-

ter and fertilizer use efficiency. Some 30 people participated in the half-day agronomic workshop, during which they exchanged information and views on site-specific nutrient management practices and how best to disseminate them, with the support of the regional fertilizer industry. The panel discussion at the end of the conference was the occasion to discuss the benefits of, and requirements for, developing strong national fertilizer industry associations.

42 delegates participated in the Kim Gai Soh Memorial Golf Tournament, which was won by Mike Erwin of Minemakers Ltd in Australia.

The Kota Kinabalu conference was the first "paper-free" IFA event. No copies of the papers were distributed at the con-



ference, but all were available online a few days later. This environment-friendly model will be progressively applied to the other IFA events.

The presentations can be downloaded at: www.fertilizer.org/ifa/Home-Page/LIBRARY/Conference-proceedings/Crossroads-Asia-Pacific-Conferences/2009-Crossroads-Asia-Pacific

IFA Moscow Conference

Industry analysts meet in Russia to better understand the constraints on fertilizer use in the CIS and to benefit from highlights on market trends and key supply issues.

A total of 184 participants from 29 countries met in Moscow on 6-9 October for the IFA Moscow 2009 Fertilizers and Agriculture Conference. This event was jointly organized by the IFA Production and International Trade (PIT) and Agriculture Committees. The participants represented 93 companies and six international organizations.

The first day was devoted to topics related to the supply and trade of fertilizer products, market trends, and major issues impacting fertilizer production, capacity and logistics. The programme comprised 12 papers. Topics on new capacity included an update on short- to medium-term potash projects in Russia, Brazil and Argentina. The current and

future supply of fertilizers and sulphur in Russia and Kazakhstan were also addressed. A paper on world freight shipping conditions covered fertilizer seaborne trade and highlighted the looming vessel tonnage additions in the short term.

The various climate change regulations in key markets were presented by TFI; they showed the wide range of industry's reactions to emerging cap and trade legislation as regards the nitrogen fertilizer sector. The World Bank's investment support programme, presented by the International Finance Corporation (IFC), provided information on the scope and level of assistance that could be offered to the fertilizer sector.

Two papers on the supply and demand trends of seaborne ammonia and UAN highlighted the positive prospects for the trade of these products in the near term. The PIT programme ended with two papers on short-term market trends in China and India, respectively.

The final two days of the conference covered a wide range of issues relating to constraints on fertilizer use in the CIS countries in general, and particularly in Russia. The programme during these two days involved 15 speakers and 12 panelists, who addressed market, distribution, policy and agronomic issues. The presentations generated lively and fruitful discussions.

IFA would like to thank BPC, Eurochem, IPC and Uralchem for kindly supporting this event.

All the presentations made in Moscow are available in both Russian and English on the IFA web site: www.fertilizer.org/ifa/Home-Page/LIBRARY/Conference-proceedings/PIT-Conferences/2009-IFA-Moscow

Enhanced-efficiency fertilizers

IFA and New Ag International co-organize the second international industry gathering on enhanced-efficiency fertilizers

The market for enhanced-efficiency fertilizers (EEFs) is developing at a sustained pace. EEFs encompass slow- and controlled-release fertilizers and those stabilized with urease or nitrification inhibitors. Traditionally, these products have been applied mainly to specialty crops. However, the market share of slow- and controlled-release fertilizers is increasing in the broad-acre crop sector (rice in Japan and, more recently, corn in the United States and rice in China). How is the EEF market expected to evolve in the medium- to long-term? And what will be the key drivers of the EEF market? Product development, economics or policy environment?

In 2005, IFA organized an international workshop on EEFs. This was the first international industry event entirely dedi-



cated to these fertilizers. Five years later, it is time to update our knowledge in the fields of research and development, agronomic and environmental benefits, the economics of EEF use, the policy and regulatory framework, and the current market and outlook. Therefore, IFA and New Ag International agreed to join forces and co-organize a one and a half day EEFs conference on 23-24

March 2010 at the Hyatt Regency Hotel in downtown Miami, Florida. It will be held in conjunction with the 8th New Ag International Conference.

The conference programme will feature more than 20 presentations. The provisional programme is available online from the IFA and New Ag International web sites.

IFA events



IFA Technical Symposium*
20-22 April 2010
Sun City, South Africa
[Registration closes on 18 March](#)

IFA Crossroads Asia-Pacific 2010
8-10 November 2010
Venue to be announced
[Registration opens in July](#)



78th IFA Annual Conference*
31 May - 2 June 2010
Paris, France
Held on the occasion of the IFA Annual General Meeting during which the Association's officers convene, IFA's main event attracts

36th IFA Enlarged Council Meeting*
2-4 December 2010
New Delhi, India
[Registration opens in July](#)

Events organized in association with other organizations

IFA/New Ag International Conference on Enhanced-Efficiency Fertilizer
23-24 March 2010
Miami, Florida, USA
[Information and registration: www.newaginternational.com](http://www.newaginternational.com)

on average 1300 participants representing 325 member companies from 75 countries. It has become a major meeting platform for the global fertilizer industry and is on the agenda of its chief executives and senior management representatives.

[Registration closes on 27 April](#)

More conference information

To access general and registration information on these events click on "Events" on IFA's web site:

www.fertilizer.org/ifa/Home-Page/EVENTS.

A pocket-sized events brochure can also be downloaded.

IFA Production and International Trade Conference*

4-6 October 2010

Rio de Janeiro, Brazil

[Registration opens in mid-June](#)

*Restricted to IFA member companies

Publications

Climate Change 2009: Science Compendium

UNEP, Nairobi, Kenya, 2009. 68 pp.
This publication presents some of the issues and ideas that have emerged since the close of research for consideration by the IPCC Fourth Assessment Report over three years ago.

Contact
unepclub@unep.org

Climate Change: Impact on Agriculture and Costs of Adaptation

G.C. Nelson, M.W. Rosegrant *et al.*, IFPRI, Food Policy Report, Washington, D.C., USA, October 2009. 19 pp.

MillionsFed: Proven Successes in Agricultural Development

D.J. Spielman and R. Pandya-Lorch. IFPRI, 2020 Vision, Washington, D.C., USA, 2009. 165 pp.

Contact
www.ifpri.org
ifpri@cgiar.org

Hope in a Changing Climate

Stories of how ecosystem restoration lifts people from poverty, stabilizes our climate and supports sustainable agriculture.

J.D. Liu. Environmental Education Media Project, 2009. DVD

Contact
www.eemp.org

Climate, Agriculture and Food Security: A Strategy for Change

Alliance of the CGIAR Centers, 2009. 45 pp.

Contact
www.cgiar.org

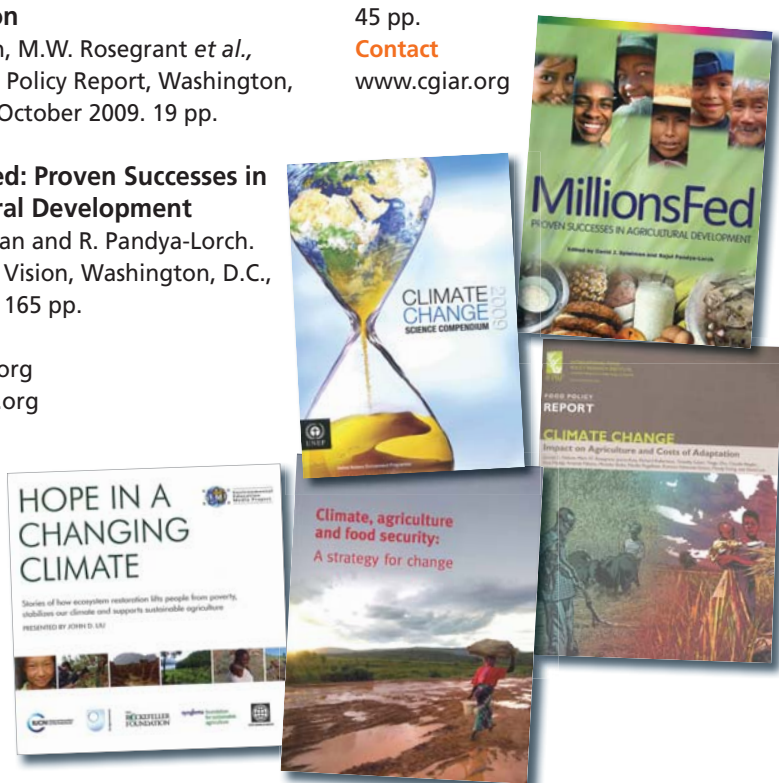
Micronutrient Handbook

H.L.S. Tandon. FDCO, New Delhi, India, 2009.

Nutrient Uptake, Removal and Recycling by Crops

H.L.S. Tandon and Y. Muralidharudu FDCO, New Delhi, India, early 2010.

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On the Web

Good Agricultural Practices for Irrigated and Rainfed Rice

This cereal knowledge databank has been developed by IRRI and contains extensive information on efficient and effective farming practices. The web site provides practical solutions from extension agents and agricultural development workers to help irrigated rice farmers boost yields, and improve grain quality and production efficiency. It also aims to help farmers reduce pesticide, fertilizer and water use.

www.knowledgebank.irri.org/rice.htm



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To consult the current and past issues of Fertilizers & Agriculture: www.fertilizer.org/ifa/Home-Page/LIBRARY/Fertilizers-Agriculture

Contributions
We invite your contributions of letters, documents, articles, photographs, etc.

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- Safety Handbook – Russian version *printed copy restricted to IFA members*
- Safety Handbook – Chinese version *printed copy restricted to IFA members*

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